

Claims

1. A method of making an adhesive article comprising the steps of:
providing a release liner comprising a moldable layer, a release surface and a back surface;
applying a pattern of a non-adhesive material to the release surface of the release liner;
embedding the non-adhesive material into the release liner; and
transferring an adhesive layer having a front and back surface and end edges onto the release liner, wherein the front surface of the adhesive layer is adhered to the release surface of the release liner.
2. The method of claim 1 further comprising applying a facestock to the back surface of the adhesive layer.
3. The method of claim 1 wherein the adhesive layer has a facestock adhered to the its back surface.
4. The method of claim 1 wherein the pattern comprises a plurality of dots, lines or combinations thereof.
5. The method of claim 1 wherein the pattern comprises a plurality of closely spaced parallel lines.
6. The method of claim 1 wherein the applying step comprises printing, vacuum metalization, or sputtering.

7. The method of claim 1 wherein the applying step comprises flexographic printing.
8. The method of claim 1 wherein the applying step comprises gravure printing.
9. The method of claim 1 wherein the applying step comprises laser printing.
10. The method of claim 1 wherein the release surface of the release liner has a Sheffield roughness of greater than about 50.
11. The method of claim 1 wherein the release surface of the release liner has a matte finish.
12. The method of claim 1 wherein the release liner has a patterned release surface.
13. The method of claim 1 wherein the applying step and the embedding step occur simultaneously.
14. The method of claim 1 wherein the embedding step comprises applying heat and pressure to the non-adhesive material and the release liner with a textured roller.

15. The method of claim 1 wherein the non-adhesive material comprises printing ink.

16. The method of claim 1 wherein the non-adhesive material comprises a UV curable ink.

17. The method of claim 1 wherein the non-adhesive material comprises coalescing ink.

18. The method of claim 1 wherein the non-adhesive material comprises a porous non-adhesive material.

19. The method of claim 18 wherein the porous non-adhesive material comprises an elastomer.

20. The method of claim 1 wherein the embedding step comprises applying heat and pressure to the non-adhesive material and the release liner using a roller or platen having an incised pattern in its surface.

21. The method of claim 1 further comprising applying randomly distributed non-adhesive particulate material onto the release surface of the release liner prior to the embedding step.

22. The method of claim 1 further comprising applying a second pattern of non-adhesive material to the release surface of the release liner, wherein said

second pattern of non-adhesive material has a thickness greater than that of the first pattern of non-adhesive material.

23. The method of claim 1 wherein said adhesive is a pressure sensitive adhesive.

24. The method of claim 1 wherein said adhesive is a heat-activated adhesive.

25. The method of claim 1 wherein the pattern comprises a plurality of lines, wherein at least 50% of the lines intersect the end edges of the adhesive layer.

26. The method of claim 1 further comprising applying a second release liner to the back surface of the adhesive layer.

27. The method of claim 1 wherein the back surface of the release liner has a release coating thereon.

28. The method of claim 27 further comprising applying a second adhesive layer to the back surface of said release liner, said front surface of said second adhesive layer in contact with the back surface of the release liner.

29. The method of claim 28 further comprising applying a facestock to the back surface of one of said adhesive layers.

30. The method of claim 28 wherein said second adhesive layer has a facestock adhered to its back surface.

31. An adhesive article comprising:
a release liner having a release surface and a back surface;
a continuous layer of adhesive having a front surface and a back surface and end edges, wherein the front surface of the adhesive is adhered to the release surface of the release liner; and
a pattern of non-adhesive material forms embedded into the release surface of the release liner, said non-adhesive material forms having a top surface.

32. The adhesive article of claim 31 wherein a facestock is applied to the back surface of the adhesive layer.

33. The adhesive article of claim 31 wherein the non-adhesive material forms have an average thickness of about 30 nanometers to about 100 μ .

34. The adhesive article of claim 31 wherein the pattern of non-adhesive material forms is applied by vacuum metalization or sputtering.

35. The adhesive article of claim 31 wherein the pattern of non-adhesive material forms is applied by printing.

36. The adhesive article of claim 31 wherein the non-adhesive material comprises at least one UV curable ink.

37. The adhesive article of claim 31 wherein the pattern of non-adhesive material forms comprises a plurality of dots, lines or combinations thereof.

38. The adhesive article of claim 31 wherein the pattern of non-adhesive material forms comprises a plurality of lines having an average width of from about 12μ to about 250μ and an average thickness of from about 30 nanometers to about 100μ .

39. The adhesive article of claim 31 wherein the pattern of non-adhesive material forms comprises a plurality of lines, and wherein at least 50% of the lines intersect the end edges of the adhesive layer.

40. The adhesive article of claim 31 wherein the pattern of non-adhesive material forms comprises a plurality of lines, and wherein the lines form a grid pattern.

41. The adhesive article of claim 34 wherein the non-adhesive material forms have an average thickness of about 30 to about 3000 nanometers.

42. The adhesive article of claim 31 wherein the adhesive layer comprises a pressure sensitive adhesive.

43. The adhesive article of claim 31 wherein the adhesive layer comprises a heat-activated adhesive.

46. The adhesive article of claim 31 wherein the non-adhesive material comprises a coalesced ink.

47. The adhesive article of claim 31 wherein the non-adhesive material comprises a porous non-adhesive material.

48. The adhesive article of claim 47 wherein the porous non-adhesive material comprises an elastomer.

49. The adhesive article of claim 31 wherein the top surfaces of the non-adhesive material forms are below the plane of the surface of the release liner.

50. The adhesive article of claim 31 wherein the release surface of the release liner has a textured surface.

51. The adhesive article of claim 50 wherein the release surface has a random texture.

52. The adhesive article of claim 50 wherein the release surface has a patterned finish.

53. The adhesive article of claim 50 wherein the lower surface of the adhesive layer has a textured surface that is complementary to the textured surface of the release liner.

54. The adhesive article of claim 31 further comprising a second release liner adhered to the back surface of the adhesive.

55. The adhesive article of claim 31 wherein the back surface of the release liner has a release coating thereon.

56. The adhesive article of claim 55 further comprising a second adhesive layer having a front and back surface adhered to the release liner, the front surface of the second adhesive in contact with the back surface of the release liner.

57. The adhesive article of claim 56 further comprising a facestock adhered to the back surface of one of the adhesive layers.

58. The adhesive article of claim 56 further comprising a facestock adhered to the back surface of the second adhesive layer.

59. An adhesive article comprising:
a release liner having a release surface and a back surface;
a continuous layer of adhesive having a front surface and a back surface and end edges, wherein the front surface of the adhesive is adhered to the release surface of the release liner;
a pattern of non-adhesive material forms embedded into the release surface of the release liner; and
a facestock adhered to the back surface of the adhesive layer,

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wherein the thickness of the non-adhesive material forms is sufficient enough to cause deformation of the facestock upon application of the adhesive article to a substrate.